DISASTER READINESS, RESPONSE AND RECOVERY MANUAL

FUNDING FOR PRINTING THIS PUBLICATION WAS PROVIDED BY LIBRARY SERVICES AND CONSTRUCTION ACT FUNDS IN CONJUNCTION WITH A GRANT FROM THE NATIONAL ENDOWMENT FOR THE HUMANITIES

Letter to Administrators

Dear Administrator,

The Rhode Island Council for the Preservation of Research Resources has prepared the ***Disaster Readiness, Response, and Recovery Manual*** to assist each institution in creating a disaster plan that responds to its needs and circumstances. It is critical that **ALL** institutions holding cultural and historical materials seek to safeguard them.

A disaster plan is an essential document that, like fire insurance, one hopes one will never have to use. In the event of a disaster, be it a locally contained roof leak, or major water or fire damage, a well-constructed plan can save your institution's valuable materials, and save time and money as well.

The most effective way of utilizing the ***Manual*** is to undertake an assessment of your institution's preservation priorities and needs. These institution-specific decisions will enable you to maximize the benefits afforded by the manual's guidance.

Workshops will be held to introduce and explain the manual and the assessment process. Please commit yourself and encourage your staff to participate. As the chief steward of your collection, you can incorporate disaster planning in your institutional planning process.

Sincerely,

Madeleine Telfeyan
Library Director
Rhode Island Historical Society

Introduction

The Disaster and Preservation Services Task Force of Rhode Island's Preservation Planning Project has prepared this manual to assist you in planning for and recovering from disasters that afflict libraries, archives, museums, historical societies, government agencies, and other such institutions. The value of the materials housed in these institutions is greater than most people realize. It is best to safeguard the contents, so that you do not have to repair or replace large portions of your collections. If you are ready to respond quickly in the case of an emergency, you will be able to limit the amount of damage that is done by most disasters. The amount of time spent completing the plan is negligible compared to the amount of time it would take to recover from a major disaster. A trained staff can respond efficiently and this will limit the amount of recovery work required.

The information contained in this manual must be familiar to **ALL** staff. When you have inserted all information that is institution-specific, it might be helpful to have a staff meeting to discuss the manual and how it should be used. One way to make sure that your staff is familiar with the information in this manual is to incorporate disaster planning into new staff orientation. Tell new staff what plans have been made, how to alert staff in the event of an emergency, and show them where recovery supplies are stored. All staff should know how to initiate the recovery plans. By making the manual part of the orientation program, new staff will be aware of the importance that is placed on disaster planning. When the pipe bursts is not the time to start reading the plan.

This manual is not a static document. You must fill in the blanks so that the information contained in it reflects your institution. Also, once the document has been filled in, that does not mean that it can be put on a shelf and forgotten. The information that you provide must be updated periodically. As staff changes, the names must be changed on all appropriate forms. Some of the forms are inspection logs for which entries need to be made on a regular basis. Disaster planning is an ongoing responsibility. The responsibility for updating the disaster plan must be assigned to specific staff members. It is best to involve several people in maintaining the disaster plan.

We have provided the blank forms for you to photocopy and fill in. You can make multiple copies of the forms, depending on the size of your staff. We recommend that your keep a blank for use as a master. In order to update information, you will need a blank to photocopy for future use. The manual is designed so that you do not have to update it entirely. The manual can be updated section by section.

There should be multiple copies of the plan. Administrators and those who will play a key role in the recovery process should have copies of the plan both in their offices and at home. Each institution has its own administrative organization, so some job titles, etc. will not match exactly. We have used job titles and department names that are commonly used. Words that appear in ***bold italics*** are defined in the glossary.

Introduction

The salvage procedures, outlined in section III of the manual, are for items damaged by fire and water. The recovery procedures are given by the scale of the disaster.
(See p. 10D.3 for help in estimating the size of disaster.)
A small disaster is one where all damaged items are salvaged immediately. These incidents should be handled in-house, using air drying methods. Only those items that require specialized treatment should not be air dried. It will normally affect fewer than 75 volumes. A medium-sized disaster will involve between 75 and 500 volumes. Some damaged items can be frozen, and the recovery process may be done in stages. A large disaster entails damage to over 500 volumes. A disaster of this magnitude will be beyond the in-house resources of your institution. The use of services provided by outside organizations will be required.

In a large scale disaster you will need a team of people who are responsible for the co-ordination of the recovery process. Their roles are explained in the disaster recovery procedures.

We wish to thank the Preservation Committee of New York University for allowing us to base the Rhode Island Manual on their ***Disaster Plan Workbook***. Funding for this manual was provided by the National Endowment for the Humanities and the Library Services and Construction Act.

If you have any questions or need some guidance in filling out this manual please get in touch with a member of the task force.

Robert Chase
State Archives
222-2283

Beth Perry
Office of Library & Information Services
222-5775

Ann Dodge
Brown University
863-1502

Jean Rainwater
Brown University
863-3723

Stephanie Mutty
U.S. Court of Appeals
Providence, RI
528-5260

Lynda Ross
Cranston Public Library
943-9080

DISASTER MANUAL UPDATE LOG

This manual was initially filled out by

Name: _____

Title: _____

Date: _____

The manual should be regularly reviewed and updated. Changes in staff, responsibility, phone numbers, floor plans, etc. should ideally be made as they occur. Inspection logs should have regular entries. We recommend that several staff members share responsibility for maintaining the manual.

This manual will next be reviewed and updated by

Name: _____

Title: _____

Date: _____

NOTE: To be filled out only once, when you develop the manual for the first time.

UPDATE LOG

DATE LAST UPDATED	STAFF MEMBER (S) RESPONSIBLE	DATE OF NEXT REVIEW	STAFF MEMBER (S) RESPONSIBLE

NOTE: To be filled out every year.

LOCATION OF DISASTER MANUAL COPIES

All copies of this manual should be updated at the same time. Copies are located:

_____

_____

_____

_____

_____

_____

_____

These staff members have copies:

	AT WORK	AT HOME
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

Chapter 1: Evacuation

A. Evacuation Procedures

1. Initiation of an Evacuation

Building evacuation may be initiated by a fire alarm or by an order issued through an authorized chain of command. A FIRE ALARM AUTOMATICALLY INITIATES AN EVACUATION. Evacuation procedures should specify who is authorized to initiate an evacuation and, in cases other than fire, who is responsible to see that each area of the building is cleared.

2. Procedures for Staff Responsible for Clearing Building

a. Make sure that all persons in your area are notified of the evacuation order. Search restrooms, lounges and other areas where people might be found.

b. Report refusals to leave the building to Police or Fire officials immediately. Make no attempt to coerce uncooperative individuals.

c. Establish a meeting point for staff.

d. Outside the building, conduct a head count to determine whether all known occupants of the building have evacuated.

3. General Evacuation Procedures

a. Staff should assist the public to leave the building as quickly as possible by the nearest exit.

b. Provide special assistance to handicapped persons as necessary.

c. Do not attempt to use the elevators. (See p. 9A.2.)

d. After evacuating, maintain a distance of at least 100 feet from the building. Set a meeting point for head count of staff.

e. Do not re-enter the building until authorized to do so.

B. Staff Authorized to Initiate an Evacuation

BUILDING/FLOOR/UNIT	NAME	TITLE	WORK PHONE	HOME PHONE

C. Staff Responsible for Clearing the Building

BUILDING/FLOOR/UNIT	STAFF MEMBER	WORK PHONE	ALTERNATE	WORK PHONE

D. Location of Emergency Exits (See also floor plans, Appendix A)

BUILDING	FLOOR	EMERGENCY EXIT LOCATION (S)

A. General Security Procedures for All Threats to Building and Personal Security (bomb threat, vandalism, harassment, deviant behavior, robbery, sit-in, takeover, etc.)

1. Immediately call the emergency number _____ or alert local security forces _____.

2. Provide as detailed information as possible about the incident.

3. Do not directly confront the violator(s). Offer no resistance.

B. Bomb Threats

1. Keep the caller on the telephone if possible and write down as much of the following information as you can:

   - Time the bomb is set to go off
   - Location of the bomb (building, floor, room)
   - Kind of bomb
   - Reason bomb was set
   - Any other information which might prove useful in finding the bomb or identifying the caller

2. Immediately call the emergency number _____ or alert local security forces _____.

Chapter 3: Fire Safety

A. General Fire Safety Facts

ALWAYS REPORT A FIRE BEFORE ATTEMPTING TO EXTINGUISH IT.

ALWAYS KEEP YOUR BACK TO YOUR ESCAPE ROUTE.

NEVER ATTEMPT TO EXTINGUISH A LARGE FIRE.

WHEN USING A FIRE EXTINGUISHER REMEMBER THE ACRONYM P.A.S.S.

- **Pull**
- **Aim**
- **Squeeze**
- **Sweep**

B. Fire Extinguishers: Fact Sheet

Fire extinguishers are classified according to the source of the fire they treat. There are three major classifications.

Type A is for solid combustibles, e.g. wood or paper.
Type B is for flammable liquids, e.g. grease.
Type C is for electrical fires.

Fire extinguishers may work on more than one type of fire. Some are suitable for both flammable liquids and electrical fires.

Extinguishers filled with water are suitable only for type A fires. The extinguishers are quite heavy.

Carbon Dioxide extinguishers can be used on both B and C type fires. They too are heavy. A 15 pound extinguisher refers only to the weight of the discharge, not the entire extinguisher. The discharge is quite cold and can cause frost bite and damage to electronic equipment. In order to be effective, one must stand quite close to the fire, between three and eight feet away. These extinguishers will discharge carbon dioxide for a duration of between 15 and 30 seconds. These extinguishers are environmentally safe.

Dry Chemical extinguishers will work on different types of fires depending on what kind of chemical is used. Generally speaking they are quite messy, and it can be difficult to clean up the discharge. They can also damage electronic equipment. With dry chemical extinguishers, one has to be between five and twelve feet away when battling the fire. They are one of the more inexpensive types of extinguisher. An ammonium phosphate extinguisher will work on all types of fire. Sodium bicarbonate will work on B and C types of fire.

Another option is the halon extinguisher; however, there are many drawbacks to them. Although halon works on all types of fires, it is quite expensive and is only effective in an airtight room. Halon depletes the ozone layer and will not be available in the future.

C. Fire Extinguisher Inspection Log

LOCATION	EXTINGUISHER TYPE	DATE INSPECTED

D. Sprinkler Systems: Fact Sheet

In the past, institutions have overestimated the chance of an accidental discharge from a sprinkler system and underestimated the amount of damage done by fires in an area without sprinklers. A sprinkler system is the recommended fire protection for a records repository.

WET PIPE AUTOMATIC SPRINKLERS
Pipes are charged with water under pressure. The sprinkler heads are heat-activated usually at 165 degrees F. Heads open individually. Most fires will usually be extinguished with one or two sprinkler heads. There is a danger of discharge if the pipes freeze. The risk of accidental discharge because of malfunction is one in one million.

PRE-ACTION AUTOMATIC SPRINKLERS
Pipes are normally filled with air. When a fire is detected, usually by heat, a valve will open allowing the water to fill the pipes. There is no danger of the pipes freezing.

ON-OFF AUTOMATIC SPRINKLERS
They are similar to a pre-action system, except that the valve not only opens at a set temperature, but also the valve will close when it is no longer needed. It will re-open if a fire breaks out again.

DRY PIPE AUTOMATIC SPRINKLERS
Pipes are filled with air under pressure. The sprinkler system is activated by heat. When the air pressure is released, a valve will open allowing the system to fill with water. Sprinkler heads will release water only in areas where the valves are open. This system is good for areas that are subject to freezing, e.g. loading docks.

STAND PIPE AND HOSE
This is a piping system in the building that is attached to hoses. This system requires training before the staff should use it.

HALON SYSTEM
This is an invisible gas, which leaves no residue. The area must be airtight in order for the halon to be effective. The system is expensive. The gas used is environmentally un-friendly and will not be available in the near future.

Chapter 4: Natural Disasters

A. Introduction

Due to the unexpectedness of most natural disasters (see inside front pocket for Emergency Management "Glancers"), it is important for all staff to review and be familiar with procedures for response and recovery before a disaster occurs.

Although it is understood that other natural disasters may possibly occur, this document only includes information about three: hurricanes, floods and earthquakes. Additional information, as well as information dealing with other natural disasters, can be obtained at:

Rhode Island Emergency Management Agency
645 New London Avenue
Cranston, RI 02920
(401) 946-9996

and through Federal Emergency Management Agency (FEMA) offices:

National Office
State and Local Programs and Support Directorate
Office of Disaster Assistance Programs
Washington, DC 20472
(202) 646-3615

FEMA - Region I
J.W. McCormack Post Office
& Courthouse Bldg., Rm. 442
Boston, MA 02109
(617) 223-9540

B. Hurricanes

With the advancement of modern detection tracking devices, it is now possible for the National Weather Service to provide between 12 to 24 hours advance warning before the hurricane hits the land. Even with this information, a hurricane can often take unexpected turns. Therefore, it is important to take the necessary precautions in advance.

A "hurricane watch" is issued whenever a hurricane becomes a threat to coastal areas. Precautionary actions should be taken as soon as a "hurricane warning" is issued. This occurs when winds are 74 miles per hour or higher, or when a combination of rough seas and high water are expected. The following are precautionary measures to be taken in the event of a hurricane:

1. Listen to local radio or television reports for the latest information.
2. Check battery-powered equipment: radios, flashlights, emergency lighting, etc.
3. Check recovery kit (see chapter 5).
4. Where possible, remove books, papers, etc. from vulnerable areas near windows.
5. Board up windows or protect them with tape. Although tape may not keep a window from breaking, it can prevent flying glass.
6. Have telephone trees available to notify staff if building is closed prior to event.
7. If advised to do so, evacuate area.
8. Be aware of tornado watches and warnings, as tornadoes are often spawned by hurricanes. During a tornado, stay away from windows. Go into a restroom without windows or a basement or closet.
9. Remain indoors during the hurricane.

C. Floods

Warnings of flood may be issued by the National Oceanic and Atmospheric Administration when rainfall or snow melt is sufficient to cause rivers to overflow their banks. The following are precautionary measures to be taken in the event of a flood:

1. Know how many feet your building is above or below flood levels.
2. Listen to local radio or television reports for the latest information.
3. Check battery-powered equipment: radios, flashlights, emergency lighting, etc.
4. Check recovery kit (see chapter 5).
5. Remove books, papers or other fragile objects from low areas if possible.
6. Disconnect electrical equipment. Do not touch equipment if it is standing in water or is wet.
7. Retreat to high areas of building if necessary.
8. If advised to do so, evacuate area.

D. Earthquakes

Although earthquakes are unusual in the northeastern United States, the possibility does exist. Unfortunately, no warning is usually forthcoming for an earthquake. Therefore, precautionary procedures need to be part of the routine inspection of your facility. The following are suggestions:

1. Hold drills so staff knows what to do in case of an earthquake.

2. Check battery-powered equipment: radios, flashlights, emergency lighting, etc.

3. Check recovery kit (see chapter 5).

4. Check for defective electrical wiring or leaking gas connections. Bolt down water heaters and gas appliances.

5. Overhead lighting fixtures should be made secure.

6. Deep cracks in the ceiling or foundations should be investigated and repaired.

7. Brace or anchor shelving units.

8. If indoors, take cover either under a heavy desk or table; or in a supported doorway or along an inside wall. Stay away from glass or book stacks. Do not use candles, matches or any other open flame because of possible gas leaks.

9. Do not dash for exits since stairways may be broken. It may be necessary to have more than one evacuation route.

10. Never use elevators since power may fail.

11. Be aware that aftershocks are likely to occur.

Chapter 5: Recovery Kit

A. Statement of Purpose

Most institutions are plagued by minor disasters: a pipe that leaks or a drain that has backed up. When this happens usually less than fifty books are damaged. It is a good idea to have a small store of recovery supplies available to handle these situations. A quick response will limit the amount of damage that is caused. The supplies should be stored in an easily accessible area. The kit should contain the most frequently used supplies, e.g. paper towels (see Suggested Inventory, p. 5B). The kit should be inventoried on a regular basis (see Inventory Control Sheet, p. 5C). As an extra precaution, the container should be sealed so that the contents aren't taken. While this kit will not contain all the supplies that will ever be needed, it will give the staff the ability to respond to a problem the moment it is discovered.

There are several advantages to storing the kit in a plastic garbage can. It is easily portable and will protect the supplies in the event of water. If the problem is a leak, the emptied garbage can be positioned under the leak to collect the water. The garbage can will facilitate the clean-up of the area, as the debris can be collected in the container and removed from the recovery area.

B. Suggested Contents

Blotting paper (white)	50 sheets
Chemical light sticks	6
Duct tape	2 rolls
Extension cords (waterproof)	2
Flashlight with batteries	1
Freezer paper	1 roll
Paper towels (folded)	6 packages
Plastic garbage bags	1 box
Plastic sheeting	10 sheets
Rubber gloves	3 pair
Waterproof markers	4
Waxed paper	5 rolls

The amount of paper towels can be increased if there is enough room.

The following written information should be stored in the kit: the location of mops, buckets, fans, dehumidifiers, pumps, wet vacs etc. and how to get to them. Also there should be a copy of Betty Walsh's "Salvage at a Glance" (see p. 10F).

All of the above should be stored in a plastic garbage can with lid. The lid should be secured with string and the ends should be sealed with wax, so that the contents are not misappropriated.

C. Inventory Control Sheet

LOCATION	ITEM	QUANTITY	DATE INSPECTED

Chapter 6: Priorities for Salvage

A. Factors in Setting Collection Priorities

The decisions regarding what to save first in the case of a disaster should be made before the event occurs. The staff members involved in the planning will be better able then to weigh a variety of factors without the added pressure of dealing with the disaster aftermath.

The priorities set during these planning discussions, accompanied by the visual record of the salvage priority floor plans (see Appendix A, p. XA.4), will allow the staff, recovery team, fire department and other authorities to take the appropriate steps in an emergency to protect or salvage those parts of the collection deemed the most valuable.

Planners should consider a number of factors including the following:

1. Does the item/collection have a high monetary value?

2. Can the item(s) be replaced?

3. Do other copies or editions exist?

4. Are the items available in an alternative format such as microform?

5. Are the items fragile and unlikely to survive damage and/or treatment?

6. Is the collection of special value to scholars?

7. Is the collection of value to the city, state, region?

8. Have the records identifying the collections been considered? (card catalogs, shelf lists, etc.)

9. Will the length of exposure to water, smoke or other adverse conditions influence the item's salvage priority?

10. When would an item be unsalvageable?

B. Collection Priorities

In the event of a disaster the following items/collections should be protected, removed and/or salvaged in the priority order listed below.

See Appendix A for floor plans indicating the locations of priority items.

PRIORITY	ITEM/COLLECTION	LOCATION
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Chapter 7: Notification

A. Emergency Guide -- Statement of Purpose

The Emergency Guide is a summary sheet of what to do in an emergency and the order in which things need to be done. The bulk of the information is phone numbers, both work and home, of selected staff members. Some names may appear more than once. Following the statement of purpose are two sample guides. The first guide should be posted throughout work areas of the institution. Staff should familiarize themselves with the procedures outlined in the guide. The second guide should be posted in public areas.

The following data needs to be inserted in the blank form provided:

1. The name, street address and main phone number are listed in the upper right hand corner of the page.

2. The first box contains information on the proper action to take in the event of a fire. Each guide will require that the location of the nearest fire call box be inserted after the colon. This information will vary depending on where the guide is posted.

3. The second box covers non-fire emergencies. Larger institutions with their own medical and security departments will be able to handle many situations in-house, while others should call 9-1-1.

4. After the immediate response has been taken, it will be necessary to alert someone from the administration. It is best to list about four or five people in this section, as no one person will be available at all times. Some people that might be listed are the Director, a Department Head or the Building Manager.

5. In the event of damage to the collections, staff on the Disaster Recovery Team (see chapter 10) should be notified. Untrained staff discovering damaged materials should not attempt to move them.

6. At the bottom of the sheet, there are several notes. The complete Disaster Plan will direct staff to more detailed instructions. Also, some situations, while unpleasant, do not require an emergency response. Finally, the form should be dated. This will help in updating and facilitate keeping the information current.

EMERGENCY GUIDE – _____

FIRE: SMOKE OR FLAMES

PULL ALARMBOX AND EVACUATE BUILDING
ALARM BOX LOCATED IN: _____

EMERGENCIES OTHER THAN FIRE

Examples: medical, vandalism, broken windows or doors, disruptive individuals
CALL EMERGENCY NUMBER: _____

Also Call:

Building problems: _____

Heating, Air-conditioning, and Ventilation Emergencies: _____

After calling the emergency number, call (in the order listed below) until you reach someone:

STAFF	TITLE	EXTENSION	HOME PHONE

In case of damaged materials, call:

_____

(See Disaster Plan directions located _____)

NOTE: Some situations do not require emergency action, such as insects, local temperature/humidity variations, etc. These problems, however, should be reported to your supervisor.

(Date _____)

EMERGENCY GUIDE –

FIRE: SMOKE OR FLAMES

PULL ALARMBOX AND EVACUATE BUILDING
ALARM BOX LOCATED IN: _____

EMERGENCIES OTHER THAN FIRE

Examples: medical, vandalism, broken windows or doors, disruptive individuals
CALL EMERGENCY NUMBER: _____

PLEASE NOTIFY STAFF OF ANY PROBLEMS

B. Staff Notification by Function

In case of an emergency requiring immediate assistance, call the emergency number _____.

Next, call the recovery director or alternate, who will either call the following coordinators personally or will delegate the task.

FUNCTION	NAME	WORK PHONE	HOME PHONE
Recovery Director/Coordinator			
Alternate			
Financial Liaison			
Alternate			
Supply Coordinator			
Alternate			
Training Instructor			
Alternate			

B. Staff Notification by Function (continued)

FUNCTION	NAME	WORK PHONE	HOME PHONE
Scheduler			
Alternate			
Building Supervisor			
Alternate			
Security Head			
Alternate			
Conservator			
Insurance Agent			
Photographer			
Alternate			

B. Staff Notification by Function (continued)

FUNCTION	NAME	WORK PHONE	HOME PHONE
Volunteer Coordinator			
Alternate			

B. Staff Notification by Name

NAME	TITLE	WORK PHONE	HOME PHONE

Chapter 8: Medical Emergencies

A. Summoning Medical Personnel

Death, Unconsciousness, Severe Medical Problems or Injuries:

1. Immediately call the emergency number _____.

2. Be precise in stating your exact location.

3. Do not hang up. Let emergency personnel end the conversation. They may have questions to ask or special information to give about what can be done until help arrives.

4. Send the nearest available person to await the arrival of the emergency vehicle and to direct medical personnel to the patient.

Minor Injuries

5. Direct or assist the injured party to local medical services, if necessary.

6. If the injury is sufficiently minor, administer first aid.

Rhode Island has a Good Samaritan Law. The law states:

> No person who voluntarily and gratuitously renders emergency assistance to a person in need thereof shall be liable for civil damages, which result from acts or omission by such persons rendering the emergency care, which may constitute ordinary negligence. This immunity does not apply to acts or omissions constituting gross negligence or willful conduct. (RIGL 9.1-2.7.1)

B. Location of First Aid Kits

LOCATION	DATE INSPECTED

C. Staff with First Aid Training

NAME	PHONE	TYPE OF TRAINING	DATE

Chapter 9: Building Maintenance

A. Building Problems

1. Power Failure

If the power goes out during the day, it may be possible to continue limited institution operations. Emergency lighting should provide limited illumination. This system should be checked periodically. If the outage occurs in the evening, the emergency system may not provide enough light. The administration will have to make a decision about evacuating and closing the institution.

Power outages should be reported to a supervisor, who will then relay the information to the maintenance division. When reporting an outage, try to ascertain how long the outage might last. It is a good idea to have flashlights placed strategically throughout the institution. (Do not place them in a drawer, etc.) By marking the handle with fluorescent tape, you will be able to locate the flashlight in the dark. A staff member should be sent to determine if anyone has been stranded in the elevator. If there is someone caught in the elevator, follow the procedures outlined in this chapter for elevator failure (see p. 9A.2). If the institution is closed, do not forget to turn off equipment, e.g. coffee pots. Also, staff members should search the building to make sure that all people get out safely.

A. Building Problems

2. Elevator Stoppage

Any elevator failure should be reported to a supervisor who will communicate the problem to the elevator repair service. "Out of order" signs should be posted on all elevator doors. **N.B.** Do not forget to remove these when the elevator is working again. A staff member should reassure anyone trapped in the elevator that someone is on the way to fix the problem. When the elevators are not working, some handicapped patrons may require assistance. If all elevators are not functioning for an extended period of time, it may be necessary to carry some patrons down the steps.

Elevator Repairs are handled by:

A. Building Problems

3. HVAC/Mechanical

Report to a supervisor any problems with the physical plant. Supervisors should get in touch with personnel authorized to initiate work orders. Do not attempt to fix the situation yourself. Do not reset thermostats. Staff should be kept aware of the status of the repair. Good communications are essential during difficult times.

HVAC/Mechanical Repairs are handled by:

_____

_____

_____

A. Building Problems

4. Collapse of Shelving

It may be necessary to have your Safety Officer determine whether or not it is safe to enter the area of the collapse. If there is a problem with the shelving, the safety officer will be able to suggest ways to reinforce or brace the shelving. The collapse should also be reported to the staff member responsible for shelving. The supervisor will schedule the removal of the books from the area. The books should be checked for damage. Once the shelving has been made sound, the books should be returned to the shelves.

PHONE NUMBERS:

Safety Officer _____

_____

_____

Shelving Supervisor _____

_____

_____

B. Staff Authorized to Call for Maintenance

One of the following staff should be notified when there is a problem with the physical plant. They are authorized to initiate a service request.

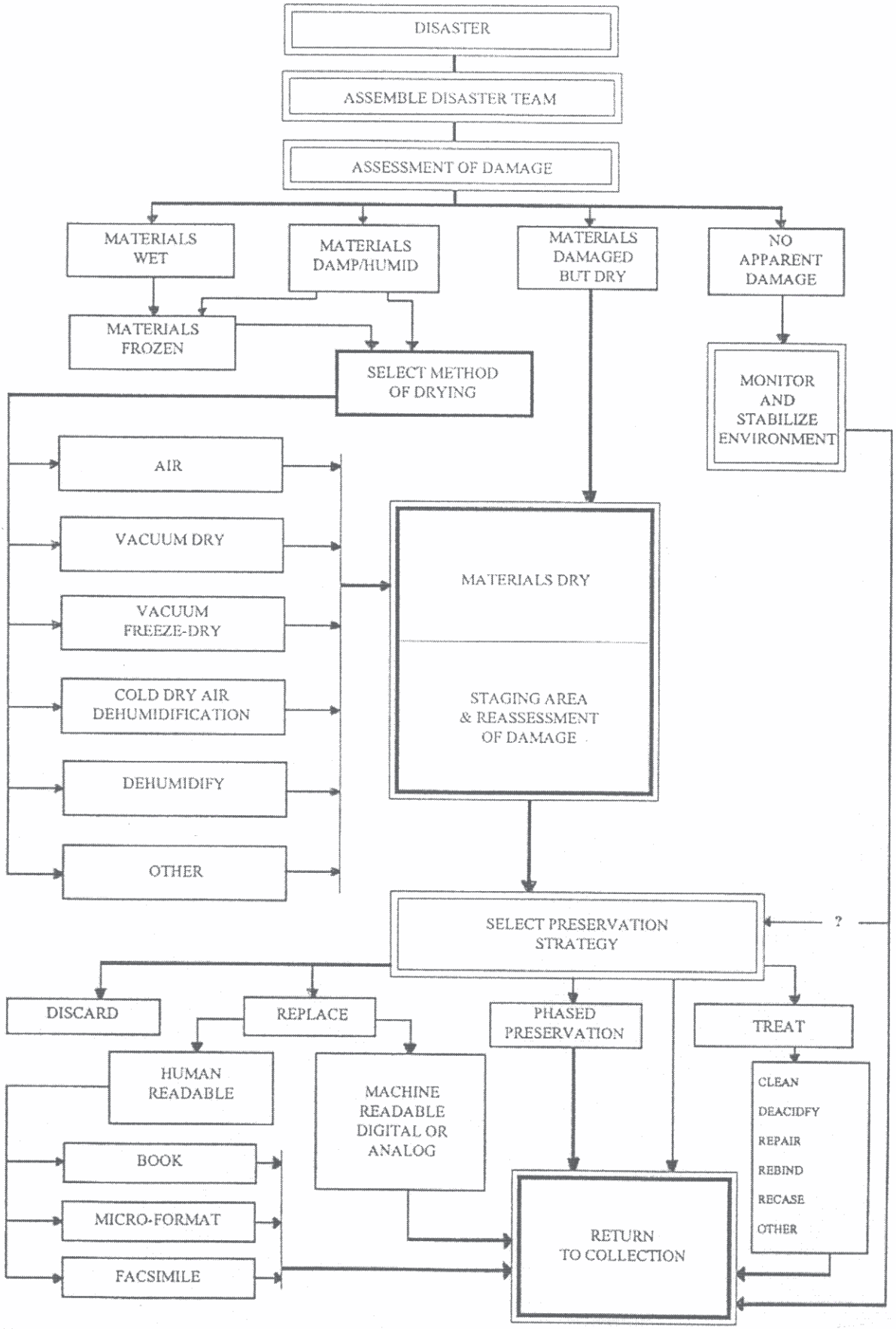
BUILDING	NAME	TITLE	PHONE

C. Maintenance Department and Personnel

The following staff are responsible for the maintenance and repair of the building.

	NAME	ADDRESS	PHONE	SERVICE REP
HVAC				
JANITORIAL				
PLUMBING				
GROUNDS				
OTHER				

DISASTER RECOVERY FLOW CHART



Modified version of Peter Waters & Robert McComb, Library of Congress 1985

B. Small Incident
Books Not Printed on Coated Paper

A small disaster is anything that can be handled in-house with no assistance from an outside concern. Damage to fewer than 75 volumes would fall into this category. Each institution should have some supplies on hand for emergencies. Usually, a problem of this size will not require the purchase of any additional supplies. Possible scenarios are a leaky pipe, a window left open during a rainstorm, or a bucket knocked over by a janitor. A disaster on this scale is likely to happen in every institution on a regular basis. Everyone should be able to deal with a situation of this magnitude. The following are steps to be taken in the event of a small incident:

1. Disaster is reported to staff members.

2. Appropriate sections of the disaster plan are implemented.

3. Staff member visits site to determine extent of problem. Steps should be taken to correct the problem. This usually means calling Plant Operations/Maintenance. (Make sure that Plant Operations/Maintenance is notified through proper channels.) If necessary the environment should be stabilized, although, in many cases this will not be necessary. Dehumidifiers and fans can be used to lower the humidity and keep pockets of stagnant air from forming. Extreme changes in temperature and humidity can be damaging to books. The conditions should be returned to normal as quickly as possible.

4. If institution materials are damaged, steps should be taken to limit the extent of damage. If it is a leaky pipe, plastic sheeting should be draped over the affected area; if a window is left open, it should be closed; etc. At this point a staff member knowledgeable about disaster recovery should be called and informed of the situation. This person decides whether to move the books, and if so, how to move the books, and where to move them. Take pictures throughout the recovery process. This will be especially important if the disaster occurs in an insured area. Also, people familiar with the insurance policy should be notified so that future claims are not jeopardized. Normally, a disaster of this size will not involve structural damage.

5. In a small disaster, the damaged books can be placed on a book truck. A metal truck is preferred. If the institution owns only wooden book trucks, they should be covered in plastic so that the books do not affect the varnish and vice versa. When loading a book truck do not place all the books on one side and do not place them all on the top shelf. Evenly distribute the weight of the books so that the book truck is not unstable. **Keep the center of gravity as low as possible.**

6. A basic inventory of removed material should be maintained. Never write on wet books, because they are easily damaged.

7. If books are muddy, they should be washed, prior to drying, if possible. **This treatment is not suitable for leather bound books, manuscripts, photographs, works of art on paper, or books that are open.** Washing requires a large space with adequate drainage. Several plastic garbage cans, each with a hose should be set up. The nozzle of the hose should be at the base of the garbage can. This should allow the dirtiest water to overflow. The books should be held tightly closed. Submerge the books and allow the running water to rinse off some of the mud. Moving down the row of garbage pails, the books can be sponged off until most of the dirt is removed. **N.B.** Sponging does not mean rubbing, it is dabbing the dirt off.

8. Freeze only those items that cannot be air dried. (See Special Media, p. 10E.1.) **Mold will begin to grow within 72 hours.** Start with the wettest items; they will usually be on the bottom shelves.

9. It is necessary to control the environment of the drying area. A relative humidity between 40-55% is considered best. Circulating air is critical for both encouraging evaporation and discouraging mold growth. Fans and dehumidifiers may be required. Wet trash should be removed periodically from the recovery area. Also, the person monitoring the drying process should check frequently for mold growth.

10. In a small disaster the books can be air-dried. When books are air-dried they should be placed on their heads (with print upside down) on white blotting paper with their boards opened slightly, about 60 degrees. It may be necessary to use styrofoam or foam rubber supports to keep the books in place. The blotting paper should be changed when it becomes wet. As the book begins to dry, unprinted newsprint or paper towels can be interleaved throughout the book, about every 50 pages. These “blotters” must also be changed, periodically.

11. If the cover is destroyed, the book can be unbound into individual ***signatures***. The ***signatures*** can then be hung on nylon fishing line (20 or 40 pound test line) and allowed to air dry. Use three lines to support materials. Pamphlets or small, damp books can also be dried in this manner.

12. Air drying takes up a great deal of space. Allow room for removing the damp blotting papers and replacing them with dry ones. Circulating air is critical for encouraging evaporation. Use fans, blowers, or open windows. When the book is almost dry it should be closed and a light weight placed on top. These books should not be stacked. If the book is allowed to dry completely in an open position there will be distortion. A book is dry when it no longer feels cool to the

touch.

13. The disaster recovery coordinator should fill out forms relating to the disaster. Every institution should have a standard form for documenting problems. (See Appendix C: Reports of Disasters, p. X:C.) Information needed includes location, time, date, nature of the problem, staff involved, action taken, number of items damaged, recovery strategy, supplies used, and clean-up activities. Photographs should also be taken throughout the recovery process. If insurance claims are involved more detailed documentation may be required.

14. When things have calmed down and the shock has worn off, check the disaster area. Make sure that all damaged items are found. Check clean up of disaster area. The shelves may have to be cleaned with a germicidal cleaner. Hospitals can be a good source of information about cleaning because they understand the concept of sterile. If liquid Lysol or a similar cleaning solution is used it should be mixed in the ratio of one cup cleaner to one gallon of water. If the disaster involved water, it is a good idea to check the underside of the shelves and all nooks and crannies for standing water. Disposable cleaning rags should be used. Some cleaners are caustic so protective clothing, e.g. rubber gloves, may be required for workers.

15. Make decisions on rebinding, repairs, and, if things were lost, replacement. Protective enclosures, e.g. ***phase boxes*** may be the wisest use of repair monies.

16. Return books to shelves. After drying, especially vacuum drying, a book will be drier than it should be. A book will absorb moisture from the air until it has stabilized. It takes a long time for books to return to normal. Peter Waters of the Library of Congress thinks that six months may be required.

17. Discuss disaster recovery operations. Where did the disaster plan not function well? Are there possible modifications to the plan?

18. Periodically check the disaster area to make sure that the books have not become moldy. Books that have been moldy will always be susceptible to mold growth.

19. Replace disaster recovery supplies used in the incident.

C. Medium-Sized Incident
Books Not Printed on Coated Paper

A medium-sized disaster is one that will test the outer limits of your ability to cope. Damage will be to fewer than 500 volumes. You will have to purchase supplies and use all available staff members. A pipe that has burst or a small fire are possible scenarios. The following are steps to be taken in the event of a medium-sized incident:

1. Disaster is reported to staff members.

2. Appropriate sections of the disaster plan are implemented.

3. Appropriate staff visit the site to determine the extent of the damage. A structural engineer or someone from the safety office may be required to declare the building is safe to occupy. Steps should be taken to correct the problem. Plant Operations/Maintenance should be contacted through the appropriate channels. It may be necessary to clean the disaster area before removing the affected materials. Water may have to be pumped from the area or debris removed from the floor. **N.B. The safety of the staff is of the utmost importance.** Remember that people are more valuable than books!

4. The decision whether or not to close the institution or sections of the building should be made by the senior administrator.

5. The environment of the disaster area should be stabilized. Dehumidifiers and fans can be used to lower the humidity and keep pockets of stagnant air from forming. The temperature should be lowered as much as possible. In the winter lower the heat as much as possible; in the summer (and if you have air conditioning) cool the air as much as possible. Warmer temperatures are more conducive to mold growth. Extreme changes in temperature and humidity can be damaging to books. The conditions should be returned to normal as soon as possible.

6. Steps should be taken to limit the extent of damage. If the damage was caused by water, place plastic sheeting over affected areas. A ***moisture barrier*** should be set up to limit the area of excessive humidity.

7. The Disaster Recovery Coordinator should make decisions about moving the books. How the books are to be moved and where they will be moved to are the most important questions.

8. If books are muddy, and there is staff and time, the books should be washed prior to drying. **This treatment is not suitable for leather bound books, manuscripts, photographs, works of art on paper, or books that are open**. Washing requires a large space with adequate drainage. Several plastic garbage cans, each with a hose, should be set up. The nozzle of the hose should be at the base of the garbage can. As the can fills with water this should allow the dirtiest water to overflow onto the floor. The books should be held tightly closed. Submerge the books and allow the running water to rinse off some of the mud. Moving down the row of garbage pails, the books can be sponged off until most of the dirt is removed. **N.B.** Sponging does not mean rubbing, it is dabbing the dirt off.

9. Freeze those materials that cannot be air dried (see Special Media, p. 10E.1). **Mold will begin to grow within 72 hours.** If all the books cannot be salvaged in that period of time, some must be frozen. Start with the wettest books. They will usually be on the bottom shelves. It may be necessary to use the freezers of staff members. Consult the institution's list of available freezers.

10. Items to be frozen must be wrapped. They may be wrapped in freezer paper, waxed paper, silicone paper, or plastic bags. Take a piece of paper and fold it around the book. **It does not have to be wrapped tightly like a present**. Sheets pre-cut to a uniform size will speed up the process. Wrapping keeps the items separate during the freezing process so they do not stick together. If there has been a delay in getting the items to a freezer, the freezing process may be facilitated by placing dry ice on the top of packing containers. If time and supplies are stretched to the breaking point, you can cut corners and wrap every other book.

11. Books should be removed from the disaster site. **Make sure that wet books stay with other wet books. Do not mix wet books with dry books.** They should be packed in either cardboard boxes (12 x 18 x 12) or plastic milk crates. The maximum size of the box should be one and a half cubic feet. The crates should not be overloaded. Wet books should never be packed on their ***fore-edges***, because the text can pull away from the binding. Books should be placed with their spines down. Usually one layer of books is the maximum to be placed in a container. Pack the boxes no more than 70% full.

12. Wet books are quite heavy and their weight can destroy a carton. These boxes should not be stacked one on top of the other, because they can collapse and cause further damage. Wet books should be handled as little as possible. If they are distorted they should be packed in the shape that they are found in order to prevent further damage. Cardboard should be placed under charred material because it is extremely fragile.

13. A basic inventory of removed material should be maintained. Never write on wet books, because they are easily damaged. Boxes should be numbered and labeled with waterproof ink. Information included on the box should include classification numbers, the range items were taken from, general estimate of amount of damage, priority for salvage and the destination of the material if it is going to an off-site location.

14. It is necessary to control the environment of the drying area. A relative humidity between 40-55% is considered best. Fans and dehumidifiers may be required. Wet trash should be removed periodically from the recovery area. Dehumidifiers will help keep the area as dry as possible. Also the person monitoring the drying process should check frequently for mold growth. Circulating air is critical for encouraging evaporation. Use fans, blowers or the like. Because things are in such a state of flux, the security of the work area and the items in it needs to be strict. Access to the work area should be limited to recovery personnel. The area should be capable of being locked.

15. When books are air-dried they should be placed on their heads (with print upside down) on blotters with their boards slightly opened, about 60 degrees. It may be necessary to use styrofoam or foam rubber supports to keep the books in place. The blotters should be changed when they become wet. As the book begins to dry, unprinted newsprint or paper towels can be interleaved throughout the book, about every 50 pages. These "blotters" must also be changed, periodically.

16. If the cover is destroyed, the book can be unbound into individual ***signatures***. The ***signatures*** can then be hung on nylon fishing line (20 or 40 pound test line) and allowed to air dry. Use three lines to support the signatures. A small, damp book can also be dried in this manner.

17. Air drying takes up a great deal of room. Allow room for removing the damp blotters and replacing them with dry ones. When the book is almost dry it should be closed and a light weight placed on top. These books should not be stacked. If the book is allowed to dry completely in an open position there will be distortion. A book is dry when it no longer feels cool to the touch.

18. The Disaster Recovery Coordinator should fill out forms relating to the disaster. Every institution should have a standard form for documenting problems. Information needed includes location, time, date, nature of the problem, staff involved, action taken, number of items damaged, recovery strategy, supplies used, and clean-up process. Photographs should be taken throughout the recovery process. If insurance claims are involved, more detailed documentation may be required.

19. When things have calmed down and the shock has worn off check the disaster area. Make sure that all damaged items are found. Check the clean-up of disaster area. The shelves may have to be cleaned with a germicidal cleaner. Hospitals can be a good source of information about cleaning because they understand the concept of sterile. If liquid Lysol or a similar cleaning solution is used, it should be mixed in the ratio of one cup cleaner to one gallon of water. If the disaster involved water, it is a good idea to check the underside of the shelves and all nooks and crannies for standing water. Disposable cleaning rags should be used. Some cleaners are caustic so protective clothing, e.g. rubber gloves, may be required for workers.

20. Make decisions on rebinding, repairs, and, if things were lost, replacement. If books are returned to the shelf without having any repair work done, an institution may want to initiate repairs when a patron complains about a specific item. Protective enclosures, e.g. ***phase boxes***, may be the most cost effective use of any repair money.

21. Return books to shelves. After drying, especially vacuum drying, a book will be drier than it should be. A book can absorb moisture from the air, but this is a lengthy process. Peter Waters of the Library of Congress thinks that six months may be required for a book to stabilize.

22. Discuss disaster recovery operations. Where did the disaster plan not function well? Are there possible modifications to the plan? Write a report summarizing what happened and how the problem was handled.

23. Periodically check the affected area to make sure that there is no mold growth. Books that have been moldy will always be susceptible to mold growth.

24. Replace disaster recovery supplies used during the incident.

D. Large Incident
Books Not Printed on Coated Paper

Large incidents involve more than 500 books or more than 50 linear feet of archival materials. Under these circumstances there is usually structural damage or mechanical failure in a building. **Make sure that all safety procedures are followed.** Causes of large-scale incidents include natural disasters such as tornadoes, hurricanes, floods, and earthquakes. Fire can also cause a disaster on this scale. Outside help is almost always required for salvage, recovery and clean-up.

A Recovery Director and Team should have already been designated. The Director will assemble the Recovery Team. A five-person Team usually works well. The Team should be comprised of:

Recovery Director/Coordinator: This person must be a member of your staff. Familiarity with the collections, the physical plant, etc. is important. This person gathers the team, handles the publicity, communications and the media.

Supply Coordinator: This person gathers and distributes supplies; monitors the inventory of supplies during the recovery process.

Training Instructor: This person trains and supervises staff and volunteers in the proper procedures during the recovery. Volunteers always have the best intentions but can cause more damage than the actual disaster.

Scheduler: This person schedules the various recovery teams: removing, sorting, packing, loading; makes sure that one team does not outpace another; schedules breaks and replacements.

Trouble-shooter: This person assists all of the above, assuring smooth work flow and preventing bottlenecks.

The Recovery Director will activate plans for supplies, staff and/or experts, and volunteers. AUTHORIZATION TO SPEND MONEY SHOULD BE SECURED AHEAD OF TIME. By getting word of a disaster out immediately, through the media, you may be able to enlist the aid of volunteers in the recovery effort. Companies may also donate needed supplies and storage space. The following are steps to be taken in the event of a large incident:

1. Disaster is reported to the staff.

2. Building is evacuated, if necessary.

3. Appropriate sections of the disaster plan are implemented.

4. The five-member Recovery team visits the site to determine the extent of the damage--if possible take photographs of the disaster area. A structural engineer or someone from the Safety Office will be required to determine whether or not the building is safe to occupy. **In cases of fire, you may not enter the building until clearance is received from the Fire Marshall.** You may not be able to enter the building. You may have to contract with a salvage company to have the damaged materials removed. Remember that people are more important than books.

5. Once clearance is received, steps should be taken to correct the problem. Plan to work closely with the Plant Operations/Maintenance staff. Your insurance company should be contacted before you begin the recovery efforts. You should take photographs of the disaster area, if possible. Also take photographs throughout the recovery process. It is a good idea to have already taken up-to-date photographs of your facility before the disaster strikes. These should be stored in a location off-site, so they aren't destroyed in the disaster!

6. Senior administrative staff should decide whether or not the institution needs to be closed. Set up a central location for communications. **Remember that some people may be in shock and that communications may be difficult.**

7. Once the extent of the damage is discovered, each member of the Recovery Team will begin to coordinate their responsibilities. Plot your strategy, think everything through before you start. Planning at this stage pays off later. ***Do not be hasty.***

8. Additional staff are alerted and scheduled as needed. Try to prevent all the staff showing up at once. Establish teams for the different jobs, e.g. sorting the damaged items. Staff will need to be scheduled in shifts. If volunteers are used, past experience indicates that their enthusiasm will last about 72 hours.

9. People are dispatched to purchase supplies. Call the suppliers to confirm availability prior to dispatching the staff to avoid frustration and wasted time. Estimates for quantities needed can be difficult to make. **In helping you estimate the size of the disaster and the supplies needed, the rule of thumb is 15 books to the cubic foot.** This number will be slightly lower if the volumes are mostly bound journals. Also, a full letter-sized file drawer equals two cubic feet, a legal-sized drawer contains approximately three cubic feet.

10. Work areas are arranged and prepared. Tables should be covered with plastic sheeting or blotters. Staff are trained for their different jobs. Throughout the recovery process work should be monitored to insure that items are being handled properly. It may be necessary to make some adjustments to procedures or staffing.

11. Establish a semblance of order in the disaster area. If necessary, turn off the electricity, clear the aisles of debris, pump out standing water. Cordon off hazardous areas.

12. Stabilize the environment. Use dehumidifiers or other equipment appropriate to the type of disaster. Try to maintain a temperature of less than 65 degrees. Turn off the heat or turn on the air-conditioning system if possible. Use fans to increase air circulation. If necessary, establish a ***moisture barrier*** by hanging plastic sheeting to confine high humidity to the disaster area.

13. Salvage those areas that you have identified as your highest priorities first. Also, pay attention to those items that are the most severely damaged.

14. If you do not have to hire a salvage company to remove your damaged items, staff can start removing items from the disaster area. **People handling materials should wear protective clothing. Gloves, aprons and respirators should be provided. Make sure that all safety procedures are followed.** It may not be possible to pack boxes onsite, due to the narrowness of aisles. Human chains may need to be used to get books to a more spacious packing area. Handle the material as little as possible. **Fatigue can lead to improper handling, so make sure people take frequent breaks.**

15. A disaster of this magnitude will probably be beyond your institution's ability to cope. You will most likely have to contract out some stages of the recovery process. This can be as limited as renting commercial freezer space or up to and including having the books packed, dried, cleaned, replaced on shelves, etc. by an outside concern. Ask lots of questions. No one will think you are stupid. For example, if you are renting freezer space, you will want to know: At what times will you have access to your material? Will your material be stored in its own freezer or merely in a large warehouse? Who else has access to the freezer area? How cold is the freezer area? etc.

16. Sort the damaged items. Different media may require different salvage procedures. (See Special Media, p. 10E.1.) Also, any items that are not going to be salvaged should be segregated, i.e. do not waste time with the current local phone book. Make sure that wet books stay with other wet books. Do not mix wet books with dry books.

17. Ideally, items to be frozen should be wrapped so they do not stick together. They may be wrapped in freezer paper, waxed paper, silicone paper, or plastic bags. Take a piece of paper and fold it around the book. **It does not have to be wrapped tightly like a present.** Sheets pre-cut to a uniform size will speed up the process. In a disaster of this size, it may not be possible to wrap even every other book. It is more important to get the damaged items packed and frozen, than to have them wrapped.

18. Books should be packed in cardboard boxes (12 x 18 x 12) or in plastic milk crates. Boxes should not be larger than one and a half cubic feet. Wet books are quite heavy and their weight can destroy a cardboard box. A box of one and a half cubic feet, filled with wet institution materials will weigh about 75 pounds.

19. Wet books should be packed spine down. Usually one layer of books is enough for each box. The boxes should never be more than 70% full. Do not pack the boxes too tightly, the items will continue to swell after they are packed. If there has been a delay in getting the items to a freezer, the freezing process can be facilitated by placing dry ice on top of the packing containers.

20. Boxes should be numbered and labeled **with waterproof ink.** Information included on the box should include classification numbers, the range items were taken from, general estimate of amount of damage, priority for salvage and the destination of the material if it is going to an off-site location.

21. Never place a carton of wet books on the floor, as it may be impossible to get it off the floor without causing further damage. Boxes, prior to freezing, should always be placed on ***pallets***. It is best not to stack the boxes because they can collapse and cause further damage. If the boxes must be stacked, do not stack them higher than three cartons. Shrink-wrapping the stacked boxes will limit damage when they are moved.

22. Air dry only those materials that cannot be frozen. (See Special Media, p. 10E.1.) **Mold will begin to grow within 72 hours.** Materials that can't be frozen should be dealt with within the 72 hour time period or they could be severely damaged.

23. The recovery process can take months, if not years. Good communications are essential to the recovery process. The Director of the recovery operations needs to communicate with the administration, the public and the staff. Keep them up to date on progress and any problems.

24. It is necessary to control the environment of the drying area. A relative humidity between 40-55% is best. Fans and dehumidifiers may be required. Wet trash should be removed periodically from the recovery area. Also, the person monitoring the drying process should check frequently for mold growth.

25. Since things are in such a state of flux, the security of the work area and the items in it needs to be strict. The area should be capable of being locked. Access to the work area should be limited to recovery personnel.

26. After the recovery process has been completed, check the disaster area again. Make sure that all damaged items are found.

27. Have area affected by disaster cleared.

28. Make decisions on rebinding, repairs, and, if necessary, replacement. If books are returned to the shelf without having any repair work done, an institution may want to initiate repairs when a patron complains about a specific item. Protective enclosures such as ***phase boxes*** may be the most cost-effective use of repair money.

29. Return books to shelves. After vacuum drying, a book will be drier than it should be, and consequently will be easily damaged. The books should be allowed to absorb moisture from the air. This is a lengthy process. It may take as long as six months.

30. Discuss disaster recovery operations with staff. Where did the plan fail to function well? Are there possible modifications to the plan?

31. Periodically check the affected area to make sure that there is no mold growth. Books that have been moldy will always be susceptible to mold growth.

32. Replace disaster recovery supplies used during the incident.

33. Gather all paperwork. File insurance claims. Write reports, etc.

E. Special Media

Damage can be done if the incorrect salvage procedures are used. Various media require specialized treatment.

MICROFORMATS

Microfilm reels should be packed in clean, cold water. DO NOT FREEZE. A microfilm processor will have to wash and dry the rolls of film. Do not allow them to dry out. Leave them in their cartons. The cartons can be held together by rubber bands.

Microfiche can be air dried.

AUDIO-VISUAL MEDIA

Collodion plates and other images on glass should never be frozen. These items are quite water sensitive. The recovery rate is low for these items.

Daguerreotypes and other images on metal must be air dried immediately.

Framed items should be carefully removed from their frames in order to keep them from sticking to their ***glazing materials***. If the ***glazing material*** has broken it can be held together with masking tape during the removal process.

Motion picture film Open the film canister and fill the canister with water. Pack in containers lined with garbage bags. A film processor should be hired to wash and dry the film.

Photographic prints on paper supports should not be frozen unless they will be dried by a professional conservator. If they must be frozen, they should be frozen quickly so the size of the ice crystal will be as small as possible. They should be salvaged within 48 hours. If they are not frozen, all photographs should be air dried image side up.

Slides should be removed from damaged mounts and air dried. Information that appears on the mount should be retained.

Sound and video recordings should be air dried. Tests involving freezing these media have been inconclusive. It is best to consult an audio-visual conservator. After about 48 hours the recordings begin to decompose. Discs should be kept vertically. They may be packed in dairy containers. The bottom should be padded with ***ethafoam*** and there should be ***ethafoam*** support every 25 records. Tapes should be stored vertically. Make sure that pressure on the sides is kept to a minimum.

MAGNETIC MEDIA

Computer tapes and disks should have adequate backup copies stored in an off-site location. The literature on recovery of these items is contradictory. It is best to ask the manufacturer for the proper procedure. The more complex the technology the less likely complete recovery will be. Salvaged items may damage the equipment being used to read it. The best advice is to have adequate backup stored in an off-site location.

MISCELLANEOUS

Books with *Coated Paper* (shiny--commonly used in art books) **MUST** be frozen and freeze dried; **NOT AIR DRIED.** Freeze drying lessens the chances of pages being stuck together. If the book dries with the pages stuck together, there is no way to separate the pages.

Boxed items are quite fragile. They will require two people when they are moved. Do not open boxes on site, as the box may have kept the material dry, and you do not want to expose the materials to excessive humidity and mold spores.

***Ephemera*:** Treat in the same manner as manuscripts.

Manuscripts (individual sheets) should be frozen and then freeze dried. If freeze drying is not available, wet manuscripts can be frozen in small batches. These small groupings can be air dried as time permits. When manuscripts are removed from the freezer, they must be allowed to thaw. Then the individual sheets must be separated. In Procedures for the Salvage of Water-Damaged Library Materials, Peter Waters explains a method of separating individual pages. This method requires a good deal of skill. A wet sheet of mylar is placed on top of the stack. As the piece of mylar is carefully pulled away, the surface tension of the water will remove several sheets of the wet paper. This smaller stack can be separated by placing another piece of mylar on the top and gently peeling back the page with the mylar. Repeat these actions as often as needed. **If this is done improperly severe damage can result**.

Maps with shellacked surfaces: When removing maps and other oversized materials it may be necessary to create a sling to support them during the move. Treat them in the same manner as individual sheets. They will have to be restored by a professional conservator. DO NOT ATTEMPT ANY REPAIR WORK. DO NOT UNROLL, ETC.

Mounted newspaper clippings: Remove from backing if possible. Treat in the same manner as manuscripts.

SALVAGE OF WATER-DAMAGED ARCHIVAL COLLECTIONS

SALVAGE AT A GLANCE*
By Betty Walsh

Material	Priority	Handling Precautions	Packing Method	Drying Method
PAPER				
Manuscripts, documents and small drawings	Freeze or dry within 48 hours	Do not separate single sheets	Interleave between folders/pack in milk crates or cartons	Air, vacuum, or freeze dry
Watercolors, and other soluble media	Immediately freeze or dry	Do not blot	Interleave between folders/pack in milk crates or cartons	Air or freeze dry
Maps; oversize prints and manuscripts	Freeze or dry	Do not separate single sheets	Pack in map drawers, bread trays, flat boxes or poly covered plywood	Air, vacuum, or freeze dry
Coated papers	Immediately pack, then freeze or dry within 48 hours		Keep wet in containers lined with garbage bags	Freeze dry only
Framed prints and drawings	Freeze or dry within 48 hours		Unframe if possible, then pack as for manuscripts or maps above	Once unframed and unmatted, air or freeze dry

Material	Priority	Handling Precautions	Packing Method	Drying Method
BOOKS				
Books and pamphlets	Freeze or dry within 48 hours	Do not open or close, do not separate covers	Separate with freezer paper, pack spine down in milk crate or cardboard box	Air, vacuum, or freeze dry
Leather and vellum bindings	Immediately freeze	As above	As above	Air or freeze dry
Books and periodicals with coated papers	Immediately pack, freeze or dry	As above	Keep wet; pack spine down in containers lined with garbage bags	Freeze dry only
PAINTINGS	Immediately dry	Drain and carry horizontally	Face up without touching paint	Air dry. See instructions
FLOPPY DISKETTES	Immediately pack	Do not touch diskette with bare hands	Contact supplier for best method	Contact supplier for best drying method
SOUND & VIDEO RECORDINGS				
Discs	Dry within 48 hours. Freezing is untested; if it is necessary freeze at above 0°F (-18°C)	Hold disks by their edges. Avoid shocks	Pack vertically in ethafoam-padded plastic crates	Air dry

Material	Priority	Handling Precautions	Packing Method	Drying Method
Sound and videotapes	Freezing is untested; if it is necessary freeze at above 10°C		Pack vertically into plastic crates or cardboard cartons. Do not put any heavy weight on the sides of reels or cassettes	Air dry
PHOTOGRAPHS				
Wet Collodion photographs (ambrotypes, tintypes, pannotypes, wet collodion negatives)	Recovery rate is low. Immediately dry	Handle with care--glass supports or glazing	Horizontally in padded container	Air dry face up. Never freeze
Daguerreotypes	Immediately dry	Handle with care--usually cased behind glass	Horizontally in padded container	Air dry face up
Nitrates with soluble emulsions	Immediately freeze	Do not blot		Air dry; test freeze drying
Prints, negatives, and transparencies	Freeze or dry within 72 hours. Salvage order: 1) color photographs, 2) prints, transparencies	Do not touch emulsions with bare hands	Keep in cold water. Pack in containers lined with garbage bags	Order of preference: 1) air dry, 2) thaw and air dry, 3) freeze dry. Do not vacuum dry
Motion Pictures	Rewash and dry within 72 hours	Do not remove from boxes; hold cartons together with rubber bands	Fill film cans with cold water and pack in plastic pails or cardboard cartons lined with garbage bags	Arrange for film processor to rewash and dry

Material	Priority	Handling Precautions	Packing Method	Drying Method
Microfilm rolls	Rewash and dry within 72 hours		Fill boxes with water, and pack (in boxes of 5) in a cardboard box lined with garbage bags	Arrange for a microfilm processor to rewash and dry
Aperture cards	Freeze or dry within 48 hours		Keep wet inside a container lined with garbage bags	Air dry
Jacketed Microfilm	Freeze or dry within 72 hours		Keep wet inside a container lined with garbage bags	Air dry
Diazo fiche	Last		In drawers or cartons	Air dry

*Reprinted with permission from the
Western Association for Art Conservation Newsletter,
May 1988, Vol. 10, No.2, for the Rhode Island
Disaster Readiness, Response and Recovery Manual (1992).

Appendix A: Floor Plans

1. General Guidelines

We suggest that you insert four sets of floor plans in this section showing

1) the location of collections,
2) salvage priorities,
3) fire safety equipment and
4) engineering and mechanical controls.

Do not try to crowd this information onto one set of floor plans. It will be too cluttered to be helpful.

2. Collection Locations

Information about location of materials should be available both in a natural language list and in the schematic form of a floor plan. The list allows for

1) a brief description of the materials,
2) the name of the collection specialist, and
3) an indication of the salvage priority assigned to each collection.

The floor plan showing the location of call number sequences will expedite the task of identifying damaged materials in the event of a large disaster.

INSERT FLOOR PLANS SHOWING COLLECTION LOCATIONS AFTER THIS PAGE.

2. Collection Locations (continued)

FLOOR PLANS/BRIEF DESCRIPTION

Floor/Area/ Range	Description of Materials Maintained in Location/Call Numbers	Collection Specialist	Salvage Priority

FLOOR PLANS/BRIEF DESCRIPTION (continued)

Floor/Area/ Range	Description of Materials Maintained in Location/Call Numbers	Collection Specialist	Salvage Priority

3. Salvage Priorities

The floor plans that follow identify those items or collections that should be protected or salvaged first in the event of a disaster.

Use these plans along with the collection priorities list in section 6B.

Note: The type of damage and the length of exposure to adverse conditions may be factors to consider as staff and other emergency personnel carry out the recovery plan.

KEEP FLOOR PLANS SHOWING SALVAGE PRIORITIES IN A SECURE PLACE.

4. Fire Safety

There should be a set of floor plans showing

1) location of fire extinguishers,
2) sprinkler heads,
3) fire call boxes and
4) smoke detectors.

It might be useful to draw evacuation routes on these floor plans.

INSERT FLOOR PLANS SHOWING FIRE SAFETY EQUIPMENT LOCATIONS AFTER THIS PAGE.

5. Engineering

Major mechanical controls such as shut-off valves, electrical control panels, etc. should be indicated on this set of floor plans. When gathering this information, it is a good time to check to make sure that all breaker switches are properly labeled.

INSERT FLOOR PLANS SHOWING THE LOCATION OF MAJOR MECHANICAL CONTROLS AFTER THIS PAGE.

Appendix B: Insurance

This section should be filled out only by institutions, which have insured their collections. Otherwise, skip to Appendix C.

Insurance Company Name: _____

Insurance Agent: _____

Phone: _____ 24-Hour Phone: _____

Policy Number: _____

Appendix B: Insurance

BOOKS, MICROFORMS, AUDIO-VISUALS

Information on the quantity and value of materials covered by the institution's insurance should be kept up to date. The following outline is an example of how this information can be organized. Data should be maintained for the main institution and any additional buildings or branches.

1. Book Volumes

	No. of Volumes	Unit Value	Total Value
General Collections			
Special Collections			
Total			

2. Catalog Cards

	No. of Cards	Unit Value	Total Value

3. Microforms

	Quantity	Unit Value	Total Value
Microfilm			
Microfiche			
Microcard			
Microprint			
Total			

Appendix C: Reports of Disasters

BUILDING PROBLEMS AND/OR DISASTER RECOVERY REPORT

This form is to be completed in stages. It should accompany the damaged materials and be filled out by the staff members who are working on them.

I. BUILDING

Floor/stack: _____ Date: _____

Ranges/room: _____ Time: _____

Person reporting problem: _____

Nature of problem: _____

Immediate action taken to minimize damage: _____

Personnel involved: _____

II. LIBRARY MATERIALS

Type of materials: _____

Quantity: _____

III. RECOVERY OPTIONS USED (List approximate number of items treated by each method listed below.)

Air Dry: _____

Freeze: _____

Replacement: _____

Rebind: _____

Dispose of/no replacement: _____

Contract with private concern: _____

Evidence of mold: Yes { } No { }

Personnel involved: _____

BUILDING PROBLEMS AND/OR DISASTER RECOVERY REPORT (continued)

IV. FOLLOW-UP

Action taken: _____

Date disaster area cleaned: _____ By Whom: _____

Date returned to shelves: _____

Short narrative of disaster and subsequent recovery:

Has this area been the site of previous problems? _____

If so, most recent date: _____

V. BUDGET

Staff hours: _____

Supplies: _____

Appendix C: Reports of Disasters

SUMMARY DESCRIPTIONS OF PAST DISASTERS

Type of disaster: _____

Location: _____ Date: _____

Description:

Type of disaster: _____

Location: _____ Date: _____

Description:

FILL OUT THIS FORM ONLY ONCE. WHEN THE FIRST MANUAL IS DEVELOPED. DON'T UPDATE ON THIS FORM. USE X:C.1 OR X:C.2 PER DISASTER MANUAL.

Appendix D: Glossary

Air Drying: most suitable for small numbers of items. It is very labor intensive, a lot of space is required, and the ambient conditions must not be humid. The air must also be circulating; fans will be necessary.

Coated Paper**:** paper used for high quality printing, e.g. art books. It has a glossy surface. The coating produces a smooth, uniform surface.

Collodion Plate**:** photographic process, image is on a glass support. When a black background is used, the image appears as a positive. In fact it is a negative image. These items are usually cased.

Daguerreotype**:** photographic process, positive image on copper plate. Depending on angle of light the image can appear as negative or positive. Images are usually in a case.

Dehumidification**:** large commercial dehumidifiers are brought into a facility with all collections, equipment, and furnishings left in place. Temperature and humidity levels can be controlled. This will work only for damp or moderately wet books.

Ephemera**:** "documents" created for the moment, e.g. clip art, popular culture.

Ethafoam**:** a rigid polyethylene foam. It is quite shock absorptive. It cushions better than thicker foams of other manufacture. Excellent for packing and shipping. Ethafoam is a brand name.

Fore-edge**:** the front edge of a book. The edge opposite the spine.

Freezer Drying**:** best for damp or moderately wet books. Items must be placed in freezer as soon as possible. Books dry best if the bindings are supported firmly through wrapping, etc. Wrap with freezer paper, wax paper, silicon paper, or unprinted newsprint. The equipment should be able to dry quickly, and the temperature should be below -10 degrees F. Therefore, commercial freezers are more suitable than home freezers. However, home freezers will work if commercial freezers are not available. This method takes from several weeks to several months depending on the equipment used.

Glazing Material**:** a clear, rigid material, such as glass, plexiglas, or polyester, which protects a print, drawing, or photograph from particulate matter.

Hygrothermograph**:** instrument that monitors relative humidity and temperature. It records fluctuations on a graph.

Appendix D: Glossary

***Moisture Barrier*:** device used to contain excess humidity in disaster area. Plastic sheeting is hung up to separate the disaster area from the parts of the library that are unaffected. Disaster areas are usually quite humid and the humidity should be contained as much as possible. The barrier will protect unaffected items from future damage.

***Pallet*:** a small, low, portable platform on which goods are placed for storage or moving.

***Phase Box*:** simple protective enclosure; 4 flap design secured with "string ties," velcro or magnets. Usually constructed of acid-free board.

***Signature*:** unit of folded pages that make up a book.

***Vacuum Freeze Drying*:** books and records are placed in a vacuum chamber to be frozen. The vacuum is pulled, the temperature is lowered and a source of heat is introduced. The books dry at below 32 degrees F., and remain frozen. Sublimation takes place (ice crystals vaporize without melting). Thus no distortion occurs. Coated paper will dry well but only if placed in the freeze drying chamber within 6 hours. **Photographs should not be vacuum freeze dried.**

Vacuum Thermal Drying: books and records may be either wet or frozen when placed in a vacuum thermal drying chamber. The vacuum is drawn and heat is introduced. The materials are dried at above 32 degrees F. **The materials stay wet while they dry. This can cause distortion in books, adhesion of coated paper, etc.**

***Wrapping*:** a covering is provided to items that have been damaged. Take a piece of paper and fold it around the book. The book does not have to be wrapped like a present. The goal is to keep items separate during the freezing process. Items can be placed in plastic bags or wrapped in freezer or silicon paper.

Appendix E: Bibliography

Barton, John P., and Johanna G. Wellheiser, eds. An Ounce of Prevention: A Handbook on Disaster Contingency Planning for Archives, Libraries, and Record Centres. Toronto: Toronto Area Archivists Group (TAAG) Education Foundation, 1985.

Boehm, Hilda. Disaster Prevention and Disaster Preparedness. Berkeley: University of California, 1978.

Buchanan, Sally. PRLC Disaster Preparedness Workbook. Pittsburgh, Pennsylvania: Pittsburgh Regional Library Center Publication, 1991.

Davies, Leon A., and Joe R. Tueller. Book Drying in a Space Chamber. California: Lockheed Missiles and Space Company, Inc., 1980.

Eulenberg, Julia Niebuhr. Handbook for the Recovery of Water Damaged Business Records. Prairie Village, KS: Association of Records Managers and Administrators, 1986.

Fortson, Judith. Disaster Planning and Recovery. New York: Neal-Schuman Publishers, Inc., 1992.

Hell and High Water: A Disaster Information Sourcebook. New York: Metropolitan Reference & Research Library Agency, 1988.

Hendriks, Klaus B. and Brian Lesser. "Disaster Preparedness and Recovery of Photographic Materials." American Archivist. Vol. 46, No. 1, Winter 1983, pp.52-68.

Morris, John. The Library Disaster Preparedness Handbook. Chicago: American Library Association, 1986.

Morris, John. Managing the Library Fire Risk. 2nd ed. Berkeley: University of California, 1979.

Murray, Toby. Basic Guidelines for Disaster Planning in Oklahoma. Tulsa: Disaster Preparedness Committee, Oklahoma Conservation Congress, 1986.

Myers, James N., and Denise D. Bedford, eds. Disasters: Prevention and Coping. (Proceedings of a Conference held May 21-22, 1980) Stanford: Stanford University Libraries, 1981.

National Fire Protection Association. Recommended Practice for the Protection of Libraries and Library Collections. Boston: National Fire Protection Association, 1986.

New York University Libraries, Preservation Committee. Disaster Plan Workbook. New York: New York University Libraries, 1984.

Appendix E: Bibliography

O'Connell, Mildred. "Disaster Planning: Writing and Implementing Plans for Collections-Holding Institutions." Technology and Conservation. Summer 1983, pp. 18-24.

Preparing for Emergencies and Disasters, SPEC Kit 69. Washington, DC: ARL, 1980.

Schur, Susan E. "Disaster Prevention/Disaster Recovery Roundup: Guide to Manufacturers and Suppliers of Products and Services for Fire, Flood, and Water Damage Control." Technology and Conservation. Summer 1983, pp. 37-44.

Spawn, Willman. "Disasters: Can We Plan for Them? If Not, How Can We Proceed?" Preservation of Library Materials. ed. Joyce R. Russell. New York: Special Library Association, 1980. pp. 24-29.

Waters, Peter. Procedures for the Salvage of Water-Damaged Library Materials. 3rd ed. Washington, DC: Government Printing Office, (in press).

Appendix F: Index

Appendix F: Index

Appendix F: Index

Appendix F: Index

Appendix F: Index